Eyes in the Sky

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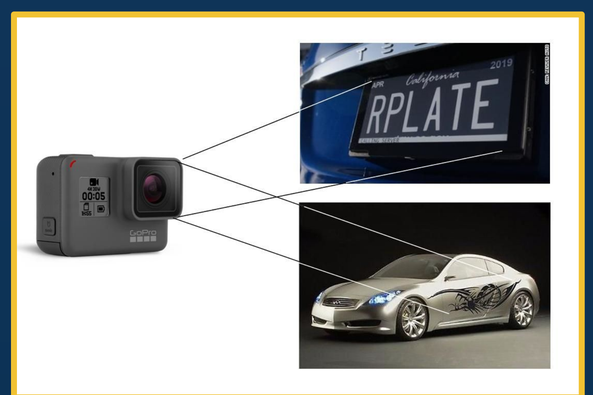
GOAL

Create an autonomous symbol tracking drone that can recognize everything from alpha numerics, paintings as well as logos and signs.

BACKGROUND

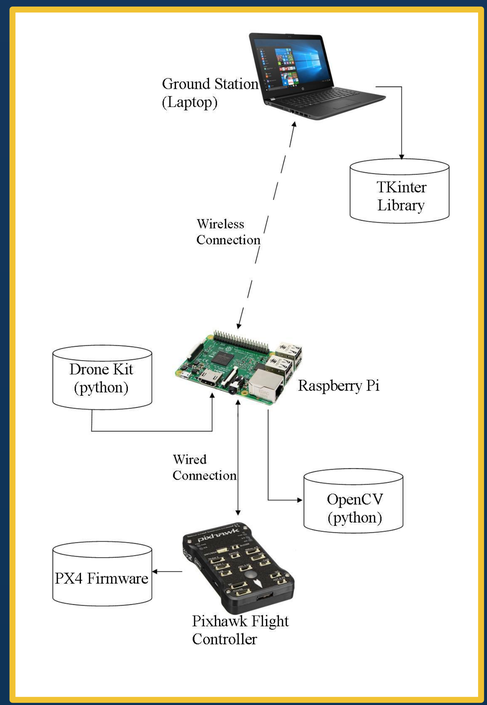
Our autonomous symbol tracking drone will recognize everything from alphanumerics to logos. Our main use case is to improve efficiency in chase and follow operations with an emphasis on collision avoidance and failsafe security



HARDWARE

Pixhawk - The main component that handles the communication between all components.
Telemetry - Enables ground and inflight communication between the pixhawk and base station.
Motors - 4 brushless motors 2 spin CW and 2 spin CCW
ESC - 4 electronic speed controller regulates the amount of power each motor will draw from the battery.

SOFTWARE



Graphics interface that communicates with the Raspberry Pi.
- See drone's current location on map
- Receive logs of what drone is doing (direction it is facing, action performing)

Library will be used to identify objects (such as cars and symbols)
- A camera will feed in video stream and program will process information and make a decision on where to move

References

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Fall 2018	Fall 2018	Winter 2018	Future 20XX
Research	Build the hardware Sensor calibration Setup repository Learning software	OpenCV Object identification Object following Drone communication	3-D Objects